



~~1.46.07~~

142357

REPORT TO THE CONGRESS



Inventories At Naval Shipyards--
Excesses And Improvements
Made B-125057

Department of the Navy

*BY THE COMPTROLLER GENERAL
OF THE UNITED STATES*

700598

MAY 28, 1971



COMPTROLLER GENERAL OF THE UNITED STATES

WASHINGTON, D.C. 20548

B-125057

To the President of the Senate and the
Speaker of the House of Representatives

This is our report on inventories at naval shipyards--
excesses and improvements made, Department of the Navy.

Our review was made pursuant to the Budget and
Accounting Act, 1921 (31 U.S.C. 53), and the Accounting
and Auditing Act of 1950 (31 U.S.C. 67).

Copies of this report are being sent to the Direc-
tor, Office of Management and Budget; the Secretary of
Defense; and the Secretary of the Navy.

A handwritten signature in black ink, reading "James B. Axtell".

Comptroller General
of the United States

D I G E S T

WHY THE REVIEW WAS MADE

01

The inventory of industrial materials on hand in the Nation's 10 naval shipyards at the end of calendar year 1969 was valued at \$110 million. Because of the size of this inventory, the General Accounting Office (GAO) examined supply management practices at four naval shipyards--Puget Sound, Philadelphia, Mare Island, and Pearl Harbor. Industrial material inventories at these four shipyards were about \$59 million, or 53 percent of the total of all shipyards.

FINDINGS AND CONCLUSIONS

There was no known shipyard need for 30 percent of the inventory at the four yards reviewed. This excess material--valued at over \$17 million--had not been reported to the naval supply system for possible redistribution to potential users, or for disposal, if no longer required.

Accumulation of much of this excess could be avoided if the shipyards would stop ordering material far in advance of actual need and establish more realistic stock levels on the basis of accurate demand and use data. (See p. 7.)

The shipyards did not have an adequate program to identify and dispose of, on a regular basis, those items no longer needed. GAO estimates that disposition of unneeded material at the four shipyards reviewed would eliminate annual holding costs of about \$3.4 million. (See p. 15.)

Shipyards are not making maximum use of Navy procedures to reduce the cost of requisitioning low-value items. GAO estimates that requisitioning costs at the four shipyards could be cut by \$1.3 million annually. (See p. 20.)

Internal audits and Navy studies of supply management at shipyards identified similar weaknesses, but recommendations had not been fully implemented by the shipyards. (See p. 23.)

RECOMMENDATIONS OR SUGGESTIONS

GAO suggested that the Navy take the necessary actions to ensure that naval shipyards improve their programs to prevent the accumulation of

unnneeded material and to dispose of excess material. These actions should include but not be limited to:

- Requisitioning material on the basis of when it is needed on the job so that material will not be held a long time before it is used.
- Establishing stocking levels for shop stores inventories consistent with lead times required to obtain material from supply sources.
- Establishing procedures to ensure that demand data are adjusted to reflect material returned to inventories and that the returned material is considered in making subsequent procurements.
- Issuing more specific guidelines for the disposition of material left over from completed jobs.
- Requiring shipyards to promptly identify and report excess material to the supply system for redistribution to other Government customers or for disposal if the material is no longer needed.

In regard to low-value items, GAO suggested that the Secretary of the Navy require shipyards to abide by Navy policy regarding the bulk issue of material which has a unit value of \$2 or less and to consider extending the policy to cover items having a unit value of perhaps up to \$10. GAO further suggested that the Secretary of the Navy take the necessary action to ensure that recommendations from internal audits and studies are fully complied with promptly or that reasons for rejecting these recommendations are approved by appropriate command levels.

AGENCY ACTIONS AND UNRESOLVED ISSUES

The Navy, concurring with GAO's suggestions, stated that a reduction of about \$28 million in inventories at the 10 naval shipyards had been made during the period January through September 1970. The Navy will continue to emphasize the reduction of inventories at shipyards. (See p. 30.)

The Navy cited a number of related actions taken or planned to

- improve requisitioning of material,
- develop revised stocking criteria,
- establish guidelines for placing material in inventory,
- dispose of excess material and set up annual inventory and reporting requirements, and
- increase to \$10 the unit value of material which may be bulk issued.

The Navy stated that the Inspector General would determine whether shipyards had satisfactorily implemented audit report recommendations and that those which had not been satisfactorily implemented must be reported until corrected. (See p. 34.)

MATTERS FOR CONSIDERATION BY THE CONGRESS

Recent and anticipated budgetary restraints require greater attention to improving shipyard efficiency. Therefore, GAO is reporting its findings to inform the Congress of the improvements made in supply management at naval shipyards.

Tear Sheet

C o n t e n t s

	<u>Page</u>	
DIGEST	1	
CHAPTER		
1	INTRODUCTION	4
	Types of inventory	4
2	ACCUMULATION OF EXCESS MATERIAL	7
	Extent of excess	7
	How excess occurs	7
	Excessive levels carried in shop stores	10
	Material left over from completed jobs	11
	Conclusion	12
	Agency comments and our evaluation	13
3	NEED FOR SHIPYARDS TO IDENTIFY AND DISPOSE OF EXCESS	15
	Identification of excess	15
	Reducing inventory holding costs	17
	Redistribution of material	17
	Conclusion	18
	Agency comments and our evaluation	18
4	REDUCING COSTS BY BULK ISSUE OF LOW-VALUE MATERIAL	20
	Conclusion	21
	Agency comments	22
5	INTERNAL AUDITS AND STUDIES OF SUPPLY MANAGEMENT AT NAVAL SHIPYARDS	23
	Internal audits	23
	Navy panel	24
	Conclusion	25
	Agency comments	25
6	SCOPE OF REVIEW	26
APPENDIX		
I	Letter dated February 9, 1971, from the Assistant Secretary of the Navy (Financial Management) to the General Accounting Office	29

APPENDIX

II	Principal officials of the Department of Defense and the Department of the Navy responsible for the administration of activities discussed in this report	35
----	---	----

D I G E S T

WHY THE REVIEW WAS MADE

The inventory of industrial materials on hand in the Nation's 10 naval shipyards at the end of calendar year 1969 was valued at \$110 million. Because of the size of this inventory, the General Accounting Office (GAO) examined supply management practices at four naval shipyards--Puget Sound, Philadelphia, Mare Island, and Pearl Harbor. Industrial material inventories at these four shipyards were about \$59 million, or 53 percent of the total of all shipyards.

FINDINGS AND CONCLUSIONS

There was no known shipyard need for 30 percent of the inventory at the four yards reviewed. This excess material--valued at over \$17 million--had not been reported to the naval supply system for possible redistribution to potential users, or for disposal, if no longer required.

Accumulation of much of this excess could be avoided if the shipyards would stop ordering material far in advance of actual need and establish more realistic stock levels on the basis of accurate demand and use data. (See p. 7.)

The shipyards did not have an adequate program to identify and dispose of, on a regular basis, those items no longer needed. GAO estimates that disposition of unneeded material at the four shipyards reviewed would eliminate annual holding costs of about \$3.4 million. (See p. 15.)

Shipyards are not making maximum use of Navy procedures to reduce the cost of requisitioning low-value items. GAO estimates that requisitioning costs at the four shipyards could be cut by \$1.3 million annually. (See p. 20.)

Internal audits and Navy studies of supply management at shipyards identified similar weaknesses, but recommendations had not been fully implemented by the shipyards. (See p. 23.)

RECOMMENDATIONS OR SUGGESTIONS

GAO suggested that the Navy take the necessary actions to ensure that naval shipyards improve their programs to prevent the accumulation of

unneded material and to dispose of excess material. These actions should include but not be limited to:

- Requisitioning material on the basis of when it is needed on the job so that material will not be held a long time before it is used.
- Establishing stocking levels for shop stores inventories consistent with lead times required to obtain material from supply sources.
- Establishing procedures to ensure that demand data are adjusted to reflect material returned to inventories and that the returned material is considered in making subsequent procurements.
- Issuing more specific guidelines for the disposition of material left over from completed jobs.
- Requiring shipyards to promptly identify and report excess material to the supply system for redistribution to other Government customers or for disposal if the material is no longer needed.

In regard to low-value items, GAO suggested that the Secretary of the Navy require shipyards to abide by Navy policy regarding the bulk issue of material which has a unit value of \$2 or less and to consider extending the policy to cover items having a unit value of perhaps up to \$10. GAO further suggested that the Secretary of the Navy take the necessary action to ensure that recommendations from internal audits and studies are fully complied with promptly or that reasons for rejecting these recommendations are approved by appropriate command levels.

AGENCY ACTIONS AND UNRESOLVED ISSUES

The Navy, concurring with GAO's suggestions, stated that a reduction of about \$28 million in inventories at the 10 naval shipyards had been made during the period January through September 1970. The Navy will continue to emphasize the reduction of inventories at shipyards. (See p. 30.)

The Navy cited a number of related actions taken or planned to

- improve requisitioning of material,
- develop revised stocking criteria,
- establish guidelines for placing material in inventory,
- dispose of excess material and set up annual inventory and reporting requirements, and
- increase to \$10 the unit value of material which may be bulk issued.

The Navy stated that the Inspector General would determine whether shipyards had satisfactorily implemented audit report recommendations and that those which had not been satisfactorily implemented must be reported until corrected. (See p. 34.)

MATTERS FOR CONSIDERATION BY THE CONGRESS

Recent and anticipated budgetary restraints require greater attention to improving shipyard efficiency. Therefore, GAO is reporting its findings to inform the Congress of the improvements made in supply management at naval shipyards.

CHAPTER 1

INTRODUCTION

Naval shipyards are field installations of the Naval Ship Systems Command. Their primary mission is to repair, modernize, and overhaul ships in the active fleet and to perform ship construction and conversion.

A working capital fund, referred to as the Naval Industrial Fund, has been established for each shipyard to finance operating costs. As a general principle, each shipyard operating under the Industrial Fund is to be reimbursed by its customers, i.e., the operating commands, for cost of goods and services to maintain working capital in the Fund.

Losses from disposal of excess and surplus property held in an industrial fund are charged to current operations and are to be recovered in reimbursements from customers as part of services rendered. Where the loss is directly attributable to a particular customer through such actions as inaccurate specifications or changes in quantity requirements, it should be recovered as a direct charge to that customer's order. Where the loss cannot be identified with a particular customer, the item is to be treated as an overhead cost.

Naval supply centers are under the command of the Naval Supply Systems Command. The primary mission of these centers is to provide supply and support services to fleet units and shore activities. They are usually located near naval shipyards, but, when they are not, the supply department of the shipyard serves a dual function of supporting both the shipyard and the fleet.

TYPES OF INVENTORY

The inventories that were the subject of our review were used mainly for the maintenance of ships or for ship construction and conversion. The Navy, for accounting purposes, segregated this inventory into three accounts; direct material, shop stores, and unassigned direct material.

Direct material consists of items obtained and earmarked for a specific customer pending issue to the job. Between the time the material is received from the supply system or manufacturer and the time it is required on the job, it is part of the direct material inventory.

Shop stores consist of items commonly used in current operations. These items usually are kept near shop operations. Shop stores items can be standard issue items, insurance items, and pre-expended items. Standard issue items have a recurring demand and are stocked on that basis. Insurance items have unpredictable demand, long procurement lead time, and are essential for maintenance of indispensable equipment or for the productive effort of the shipyard. Pre-expended items are low-cost items which are issued in bulk to the users and are considered used when issued. No report of actual use is required.

Unassigned direct material consists of items left over from completed jobs. Unlike direct material, there is no specific customer for this material, but it may be retained if there is a probability of use in the near future. The inventory of unassigned direct material may contain items transferred from inventories either of direct material or shop stores.

The inventory of industrial materials on hand in the Nation's 10 naval shipyards at December 31, 1969, amounted to about \$110 million. Direct material amounted to \$62.8 million, shops stores \$41.7 million, and unassigned direct material, \$5.5 million. In 1969 the amount of the inventories decreased about \$49.3 million below 1968 levels. The largest decrease was in direct material inventories, chiefly due to a decrease in new construction assigned to naval shipyards and increased emphasis by the Naval Ship Systems Command and shipyard commanders on minimizing investment in inventories. Industrial material inventories at the four shipyards we reviewed were valued at about \$59 million at December 31, 1969, as shown in the following schedule.

<u>Shipyard</u>	<u>Direct material</u>	<u>Shop stores</u>	<u>Unassigned direct material</u>	<u>Total</u>
Puget Sound	\$ 9,838,000	\$ 4,758,000	\$1,041,000	\$15,637,000
Philadelphia	17,564,000	3,472,000	179,000	21,215,000
Mare Island	8,503,000	6,788,000	311,000	15,602,000
Pearl Harbor	<u>1,692,000</u>	<u>2,916,000</u>	<u>1,750,000</u>	<u>6,358,000</u>
Total	<u>\$37,597,000</u>	<u>\$17,934,000</u>	<u>\$3,281,000</u>	<u>\$58,812,000</u>

The value of the above inventory is based on Navy reports. The figures include many items at nominal value, generally 1 cent. Our computations of excess material are based on acquisition cost; therefore, our estimates of excess material, as discussed in chapter 2, exceed the value reported by the shipyards.

CHAPTER 2

ACCUMULATION OF EXCESS MATERIAL

There are many reasons for the accumulation of excess material, such as recording of inaccurate demand data, anticipated use that did not materialize, a shipyard practice of ordering material to cover unforeseen requirements, and changes in scope of work and material specifications. In our opinion, the shipyard practice of ordering material far in advance of actual need is one of the more significant factors contributing to the accumulation of excess material, since adjustments to reflect subsequent changes in work requirements cannot be made if material is already on hand.

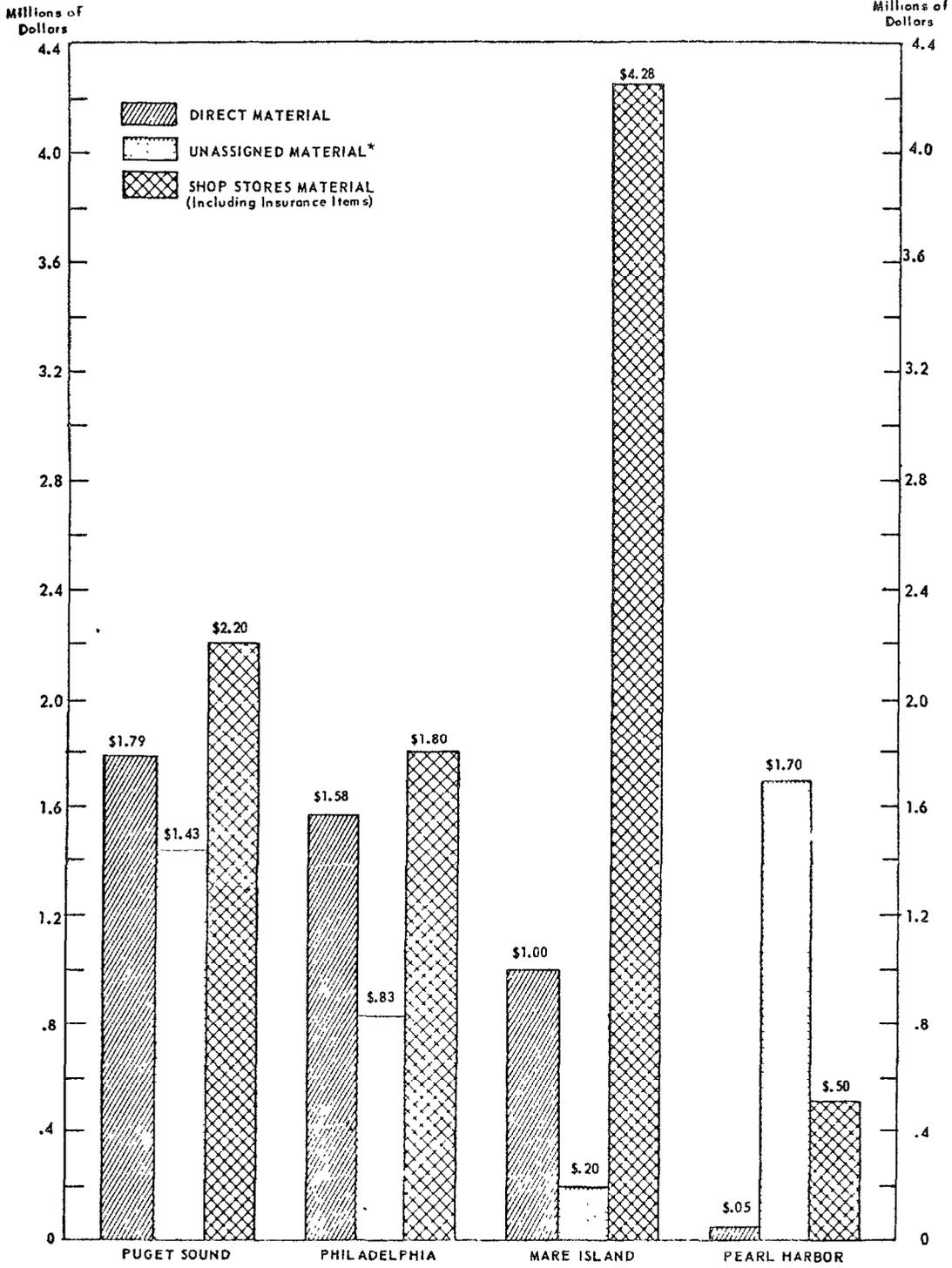
EXTENT OF EXCESS

To determine whether on-hand quantities were needed, we reviewed a statistical random sample of items from each of the three types of inventories--direct material, shop stores, and material left over from completed jobs. The percent of excess in our samples was projected to all items in each type of inventory. The methods used in computing excess are described in chapter 6. We found that over \$17 million worth of material was excess. The graph on the following page shows the value of the excess material, by type of inventory, held at the four shipyards.

HOW EXCESS OCCURS

We believe that the ordering of material far in advance of actual need contributes to the accumulation of unneeded stock. For example, the Mare Island and Puget Sound Naval Shipyards followed a practice of obtaining nearly all material for shipwork prior to arrival of the ship. Since the ships may be in port for periods up to 15 months, the material is retained in storage until required. Up to the time the material is actually needed, there are changes in scope of work and in material specifications. Early delivery increases the exposure of material to these changes and thereby increases the probability that the material will never be used for the purpose intended.

EXCESS MATERIAL AT SHIPYARDS



* Based on cost of items with exception of amount shown for Mare Island. The amount shown for Mare Island represents the acquisition cost of 705 line items, an additional 962 line items carried at nominal value are not included.

In addition to changes in material specification and work scope, material becomes excess because of anticipated use that does not materialize and because of unrealistic shop store stock levels. Also, such shipyard practices as ordering more than enough material to meet requirements, failure to adjust shop store demand records for material returned to inventory, and failure to consider available leftover material in making subsequent procurements all contribute to excess.

We recognize that conditions are constantly changing, and many unknowns exist in the environment in which shipyards operate. We believe, however, that more effective supply management practices at naval shipyards could reduce excess material.

We did not attempt to determine the amount of excess resulting from each individual factor. Considered alone, each factor may not have a significant effect on the accumulation of excess; considered together, the factors have a definite effect on material becoming excess.

Navy officials told us the practice of obtaining early delivery was established to ensure availability of material to meet production schedules and to avoid having a higher priority need override the shipyard requisitions. Although we agree with the shipyards' desire to meet production schedules, we find little support for the above-stated concern over the ability of the supply system to meet shipyards' needs. We found the supply system, in general, to be responsive to the shipyards' needs. For example, about 84 percent of the requisitions submitted to the supply system by the Mare Island Shipyard during October 1969 were filled within 15 days of the stated required delivery date. Analysis of nine items received late showed that only one had contributed to a job delay.

In July 1968 the Pearl Harbor Naval Shipyard began requisitioning material on the basis of anticipated lead time and in accordance with when the material would be required for productive work. Direct material inventory at Pearl Harbor was reduced from \$5.6 to \$1.7 million during calendar year 1969 partly as result of this change. Our review did not disclose any significant adverse effect on the ability of the shipyard to return the ships to the fleet

promptly. We believe the success experienced by the Pearl Harbor Shipyard in reducing its inventory shows that obtaining material on the basis of when actually required is a workable system.

EXCESSIVE LEVELS CARRIED IN SHOP STORES

The Navy provides guidelines for the quantity of individual items which a shipyard should carry in production shops. These guidelines are broad and give shipyards wide latitude in determining on-hand levels of material. Simply stated, a level is expressed in days of supply and provides for current operating needs plus the time needed to replenish stocks.

Navy guidelines suggest that a maximum of 90 days' supply of stock be maintained in shop stores for those common-use items stocked by supply centers located adjacent to shipyards. Three of the four shipyards that we reviewed were located near supply centers, the one exception being the Philadelphia Naval Shipyard.

Our review of the stocking policy in shop stores showed considerable variance in the level of items stocked. These levels varied from 90 days at Puget Sound and Pearl Harbor to anywhere from 240 to 480 days at Philadelphia. Mare Island also used the 90-day level, but this was doubled to 180 days' stocking criteria for quality assurance items.

Using the shipyards' criteria at the three shipyards adjacent to supply centers, we found that the actual on-hand quantities greatly exceeded the recommended days of supply. At the Philadelphia shipyard we used the 90 to 180-day stock level established by the Naval Ship and Supply Systems Commands because the stocking level of 240 to 480 days used by Philadelphia was acknowledged to be too high by a responsible shipyard official. Our tests of actual lead times required to obtain replenishment stocks indicated that a 180-day stocking level was reasonable. Our comparisons showed that more than \$7.5 million of the \$12 million on-hand shop stores inventory at the four shipyards was excess to the established stocking levels.

We found also that shipyards had large quantities of insurance-type items on hand in shop stores. To be properly

classed as insurance stock, the item must have a long lead time, must have nonrecurring use, and must be required to accomplish the shipyard's mission. The four shipyards were holding large quantities of insurance stock valued at about \$1.3 million which did not meet these criteria. Many had patterns of recurring use or short lead times. For other items there was no actual need, and they were considered excess.

At Pearl Harbor we estimated that 17 percent of the items held as insurance stock were available at either the nearby supply center or were included in other shipyard stocks. Shipyard officials stated that supply system stock could not be relied upon to pass inspections. Shipyard officials advised us that they were aware that these items should not have been classed as insurance items but, to ensure that material is available in an inspected condition, the instructions were not followed. Our review covering over 1,600 items received and inspected by the shipyard showed a rejection rate of only 6 percent. We believe that this indicates that a substantial degree of reliance can be placed on supply system stocks.

MATERIAL LEFT OVER FROM COMPLETED JOBS

The inventory designated as unassigned direct material comprises items left over from completed jobs. According to Navy guidelines, leftover material may be held as unassigned direct material inventory if there is a high probability of use for the items in the near future. In our opinion, shipyards are not following Navy criteria as to what materials should be in this inventory. As a result, unassigned direct material has become a "dumping" category for items left over from completed jobs.

Shipyards were holding excess unassigned direct material valued at about \$4 million. To arrive at this estimate, we selected random samples for each shipyard's inventory and obtained the views of responsible shipyard officials concerning whether there was a high probability of use in the near future. We then projected the excess in our sample to the total number of items in the inventory. We adjusted the shipyards' reported value of this material to represent acquisition cost.

According to Naval Ship Systems Comand Instruction 4490.8, materials which have a high probability of being required in the near future may be held as unassigned direct material. The instruction lists seven criteria as mandatory prerequisites for holding these items. A summary of some of these criteria follows.

1. The decision to hold leftover material as unassigned must be made only by authorized individuals who, by inspection or technical knowledge, can determine if the item has a probability for use in the near future.
2. Decisions to retain these items must be based on a probable, though not necessarily specific, requirement.
3. Material retained will be subject to continuing review to determine if there are specific requirements for individual items.
4. The unassigned material category must not be used as a device for deferring losses on material for which there is no foreseeable need.

We found that these criteria had not been met by the shipyards. For example, Pearl Harbor removed excess material from direct material inventory and held it as unassigned material. Pearl Harbor was holding this material even though they advised us that nearly all of it was excess to present and future needs. Similarly, Puget Sound was holding about \$1.4 million worth of unassigned material which was excess to its requirements.

CONCLUSION

We believe there are opportunities to improve supply management at naval shipyards which would result in more effective and efficient operations. To accomplish this, shipyards need to implement basic supply management practices and more rigorous command surveillance is needed. Shipyards must periodically redetermine the levels of stock on hand using valid and realistic factors and, on the basis of these determinations, take action to dispose of excess material.

In our opinion, Navy guidelines need to be more specific, especially in defining what constitutes foreseeable need. We recognize that this is subjective and there is some merit to holding material if there is a probable future need. We believe, however, that shipyards have taken too liberal a view of what constitutes need and are not following the spirit of Navy guidelines; thus, material is being held which otherwise should have been disposed of.

We proposed that the Secretary of the Navy take action to ensure that naval shipyards improve their programs to prevent accumulation of unneeded material. These programs should include:

- Requisitioning material on the basis of when it is needed on the job so that material will not be held a long time before it is used.
- Establishing stocking levels for shop stores inventories consistent with lead times required to obtain material from supply sources. These levels should then become the basis for periodically determining excesses.
- Establishing procedures to ensure that demand data are adjusted to reflect material returned to inventories and that the returned material is considered in making subsequent procurements.
- Issuing more specific guidelines for the disposition of material left over from completed jobs.

AGENCY COMMENTS AND OUR EVALUATION

The Assistant Secretary of the Navy (Financial Management) replied to our draft report by letter dated February 9, 1971. (See app. I.) He stated that there had been continued emphasis on the reduction of Navy Industrial Fund inventories. During the period January through September 1970, inventories were reduced by \$28 million, and this trend in reducing inventories is expected to continue.

The Navy concurred fully with the objectives of the suggestion related to the requisitioning of material. The Assistant Secretary stated that the problem was a very

complex one requiring resolution of many factors, including some not mentioned in this report. The Navy cited the following efforts being made to improve material requisitioning. It has

- issued an improved priority system for ordering materials in naval shipyards,
- directed the development of procedures for the ordering of materials,
- refined the material status reporting system so that it can be updated automatically to reflect changes in production schedules.

The Navy is in the process of developing revised stocking criteria. These new criteria are designed to give adequate consideration to the lead times required to obtain material and to the adjustment of demand data.

The Navy, in commenting on our report, concurred in the need for more specific guidelines for the disposition of material left over from completed jobs. The Assistant Secretary advised us that firm guidelines for placing materials in the direct material account had been issued.

The Navy's response did not mention that guidelines had also been established for material left over from completed jobs. In subsequent discussions with Navy officials and through reviewing the new instructions, it is apparent that the guidelines do cover material left over from completed jobs as well as direct material.

CHAPTER 3

NEED FOR SHIPYARDS TO IDENTIFY AND DISPOSE OF EXCESS

Although significant quantities of material were excess to the needs of the shipyards, they did not have effective programs to identify and dispose of unneeded items.

There is reluctance on the part of shipyard management officials to dispose of unneeded material either through redistribution to other users or through sale as scrap. This reluctance stems from a desire to hold down overhead rates. Any losses incurred through the disposal of material are assumed by the shipyards and are reflected in overhead rates. Overhead rates can be an indication of shipyard efficiency. Since there is competition for work, each shipyard understandably prefers to keep overhead to a minimum.

Significant savings can be realized through disposition of unneeded material. We estimate that, if excess material at the four shipyards we reviewed was disposed of, about \$3.4 million worth of annual holding costs incurred by the shipyards would be eliminated. Furthermore, since a portion of this material could be used by others, savings could also result through reductions in purchases of identical items.

IDENTIFICATION OF EXCESS

At the shipyards we visited there was no adequate program to identify excess material. To keep inventory within acceptable quantities, periodic computations are required and those items determined not to be needed should be purged from on-hand quantities.

The shipyards we reviewed followed a practice of not identifying unneeded direct material until all shipwork was completed or even much later. For instance, the Philadelphia Naval Shipyard did not transfer material left over from the repair of an aircraft carrier to the unassigned direct material account until 8 months after the repairs had been completed. The Puget Sound Naval Shipyard was still accounting for material left over from the overhaul

of a submarine 5 months after the work was completed. As long as prompt action is not taken to identify material left over after completion of a job order, the shipyards will obviously not be able to make the most efficient use of their material resources.

Two of the shipyards prepared a computer listing of excess shop stores on the basis of predetermined stocking levels. However, the excesses were not disposed of because the yards did not want to reflect the inventory losses in their overhead rates. The other two shipyards had not recently reviewed shop stores' active items to determine excess on hand. For example, Puget Sound procedures required a quarterly listing of excess items, but this listing identified only items that had no use rather than those held in a quantity over shipyard stocking criteria. The Philadelphia Naval Shipyard was able to produce an excess material listing for management purposes, but we were told that this had been done only once prior to our request for this listing.

Shipyards were not returning or reporting most of the excess material to the supply system, primarily because credit usually was not given and losses incurred would be charged to overhead. We found that the shipyards did, on a periodic basis, inquire whether the system would buy the excess material from the shipyards. If the system was in a "buy position," the shipyards would return the material and receive credit. We were told that in most cases the supply system was not in a buy position and would not allow credit. We were advised that, because of lack of credit from the supply system, shipyards hold material to avoid recognition of losses in their overhead accounts.

The shipyards have been disposing of some excess material but, in relation to the current inventory value, a significant amount of excess is still being retained.

At Puget Sound, shop stores' insurance inventory valued at \$861,000 was excess. Reviews of shop store insurance items had been conducted by the shipyard in 1968 and 1969. The purpose of these reviews was to identify opportunities to (1) reduce the cost to the Government of storing, record-keeping, and processing material for which a need did not exist and (2) reduce the amount of capital required in the

shipyard Naval Industrial Fund. The reported reduction of insurance inventories was \$1,161,000 for 1968 and \$345,000 for 1969. We found that the shipyard had not really reduced the inventory by the amount claimed, but had only transferred most of the material to other inventory accounts. The actual reduction of shipyard inventories from the 1968 and 1969 reviews was only about \$104,000 and \$26,000 (0.43 percent and 0.14 percent), respectively.

REDUCING INVENTORY HOLDING COSTS

We believe that the naval shipyards could realize a substantial reduction in operating costs if disposal of excess material was accomplished. Although it is not possible to state precisely the amount of savings possible, such savings can be substantial. The \$17 million worth of material estimated to be excess at the four shipyards costs approximately \$3.4 million annually to hold.

Inventory holding costs, which include such factors as obsolescence, interest on capital, deterioration or its prevention, handling, and storage facilities, generally run from 20 to 25 percent of the average inventory value. A representative of the Naval Supply Systems Command estimated the Navy's inventory holding cost, on the basis of similar cost factors, to be about 23 percent of inventory value. If we use the lesser 20 percent figure, the cost to hold the \$17 million worth of excess is about \$3.4 million annually.

REDISTRIBUTION OF MATERIAL

Inquiries at the Ships Parts Control Center, Mechanicsburg, Pennsylvania, and naval supply centers located near shipyards included in our review indicated that a substantial demand exists for items being needlessly held at the shipyards.

Analysis of a sample of 64 excess line items showed that during the last year the Ships Parts Control Center had requests for 85 percent of the identical items from its customers. Our review at the Puget Sound Naval Supply Center showed that during a 10-month period the supply center had requests for much of the same material which was being carried by the Puget Sound Naval Shipyard but not needed by them. About \$288,000 worth of this excess material could

have been used by the supply center to satisfy its customers' needs. Similarly, excess material valued at \$849,000 held by Mare Island Naval Shipyard could have been used to satisfy needs at the nearby Oakland Naval Supply Center.

In addition to putting this excess material to use outside the shipyard, we found that there was a need within the shipyard for this material. For example, at Mare Island we noted that seven of the 23 items in our sample of direct shipwork material were no longer needed on the job for which they were originally ordered. These items, however, were needed for a subsequent job and, because they had not been identified as excess, procurements of \$117,600 were made for duplicate material to be used on the subsequent job.

CONCLUSION

We conclude that shipyards are incurring excessive holding costs as well as depriving other customers of the use of this material.

In our opinion, command levels must emphasize to shipyards that the reduction of overall operating costs take precedence over the desire to hold down overhead rates. To accomplish this, command levels must have adequate data on shipyard operations.

We suggested that the Secretary of the Navy require shipyards to promptly identify and report excess material to the supply system for redistribution to other Government customers or for disposal if the material is no longer needed.

We suggested also that the Secretary of the Navy initiate operational standards and a reporting system to adequately measure the action of shipyards to keep inventories to a minimum.

AGENCY COMMENTS AND OUR EVALUATION

The Assistant Secretary of the Navy stated that new procedures had been implemented which ensured expeditious disposition of excess material, established inventory accounts, and required annual inventory and reporting for this account.

The new procedures were contained in an instruction issued late in December 1970. We reviewed this instruction and found that, although the Assistant Secretary's reply did not mention that the material in the shop stores and unassigned inventory accounts would also be considered, the instruction did make provisions for this inventory.

CHAPTER 4

REDUCING COSTS BY BULK ISSUE OF LOW-VALUE MATERIAL

Using current Navy policy for the issue of material can save about \$1.3 million. Items, commonly used by a shop in its current operation, which have a unit value of less than \$2 are to be issued differently from other items. Low-value items are placed in bins in the working area and are available without requisition. These items are considered expended when issued to the bins rather than when actually used. Thus, these bins have come to be known as pre-expended bins.

The operation of pre-expended bins is based on the premise that there is a need for high-use, low-priced items to be readily available in the production areas and that the cost of operating bins for such material is insignificant when compared to the paper work and labor hours saved by expediting the issue of material. This policy was based on an estimate that it costs more than \$2 to process a requisition. The objective is to achieve maximum use of pre-expended bins for items with a unit value of less than \$2.

As shown below, none of the four shipyards were making maximum use of pre-expended bins.

<u>Shipyard</u>	<u>Number of annual issues</u>	<u>Number of issues \$2 or less not pre-expended</u>	<u>Potential savings from additional pre-expending</u>
Puget Sound	480,800	153,900	\$ 307,800
Pearl Harbor	498,500	305,300	610,600
Mare Island	283,500	56,300	112,600
Philadelphia	<u>324,000</u>	<u>155,500</u>	<u>311,000</u>
Total	<u>1,586,800</u>	<u>671,000</u>	<u>\$1,342,000</u>

Shipyard officials advised us that reluctance to increase overhead budgets to provide for increased use of pre-expended bins was the primary reason that this policy had not been followed more extensively. Under accounting procedures in existence at the time of our review, the use

of pre-expended bins converted direct material costs to overhead costs. Even though total costs were reduced, a conflict with shipyard management's objective of keeping overhead rates down resulted. We found, however, that pre-expending all issues with a value of \$2 or less at Puget Sound would increase the hourly overhead rate by only 1.4 cents even if no offsetting reduction in overhead was obtained through decreased work load.

Some shipyards have expressed an interest in pre-expending items up to \$10. At three of the shipyards, we found that the shop stores' issue work load could be reduced by 74 percent on the average as shown in the table below.

<u>Shipyard</u>	<u>Number of annual issues</u>	<u>Number of issues \$10 or less not pre-expended</u>	<u>Percent of regular issue work load</u>
Puget Sound	480,800	360,600	75
Mare Island	283,500	171,200	60
Philadelphia	<u>324,000</u>	<u>272,200</u>	84
Total	<u>1,088,300</u>	<u>804,000</u>	74

At Puget Sound we estimated that pre-expending issues valued at \$10 or less would increase the hourly overhead rate by only 14 cents even if no offsetting reduction in overhead was obtained through the decrease in work load.

CONCLUSION

We believe that Navy policy regarding the issue of low-value items is essentially sound. In our opinion, an overall reduction in total costs should be the prime consideration, regardless of the method used to account for such costs, and shipyards should not incur additional issue costs simply to maintain lower overhead rates. Command levels must reinforce this policy.

We suggested that the Secretary of the Navy require shipyards to pre-expend shop stores material valued at \$2 or less per issue and consider increasing the use of pre-expended bins to issues valued at over \$2.

AGENCY COMMENTS

The Assistant Secretary of the Navy stated that shipyards have been authorized to pre-expend material up to a unit value of \$10. He stated also that instructions had been issued which contained effective guidelines for maximizing the use of pre-expended bins. Those items which require special handling, such as pilferable material, will not be bulk issued.

CHAPTER 5

INTERNAL AUDITS AND STUDIES OF

SUPPLY MANAGEMENT AT NAVAL SHIPYARDS

The Naval Audit Service conducts periodic and continuing audits at naval shipyards. Special studies and projects pertaining to supply management at shipyards and other industrial fund activities have been performed by the Navy and within some of the shipyards included in our review. We found, in general, that the internal audit activities succeeded in identifying supply management deficiencies similar to those shown in this report. Although internal audits and special studies identified the problems and recommended corrective action, we found that the recommendations had not been fully implemented by the shipyards. In our opinion, the weaknesses that we found would have been minimized or eliminated had the suggested corrective action been taken.

INTERNAL AUDITS

The Naval Audit Service, in a report dated January 1968, stated that Puget Sound shop store inventories exceeded authorized stock levels. The Naval Audit Service concluded that reducing these inventories to authorized levels would permit substantial curtailment of replenishment orders and reduction in inventory investment. It recommended that the shipyard perform quarterly reviews of all shop store items in excess of authorized stock levels and reduce stocks to the prescribed levels. In reply to this recommendation, the shipyard stated that shop store demand history cards were reviewed quarterly and items showing no use for the past year were considered for possible excessing. Our review showed that a quarterly listing of excess items was required, but this listing only identified items having no use rather than those held in quantities over shipyard stocking criteria.

A Naval Audit Service report dated September 1968, covering supply management aspects at Pearl Harbor, recommended the reduction of material excesses in direct material inventories. As corrective action, Pearl Harbor stated that it was reducing excesses in its direct material

account by transferring them to the unassigned material account. In our opinion, the action taken was not responsive, since the material was merely transferred to another inventory account which was also excess.

The Naval Audit Service, in its January 1968 report on Puget Sound, stated that pre-expended bins had not been sufficiently used for low-value, fast-turnover items. They estimated that shop stores issuing costs could be reduced an estimated \$170,000 annually through increased use of pre-expended bins. Puget Sound replied that a special review of all shop stores items with a unit cost of \$2 or less was being made to supplement the continuing program already in effect. The shipyard did expand its use of pre-expended bins. As mentioned on page 20, we found that further use of pre-expended bins could be achieved.

NAVY PANEL

A Secretary of the Navy Ad Hoc Panel on Industrial Fund Management, in a report dated February 1969, stated that industrial fund activities, particularly shipyards, were obtaining material for new construction long before it was required. This report stated that, under existing accounting procedures, industrial fund activities had little incentive to return excess material to the supply system. The Panel recommended that the Navy study the economic impact of long-term contracting for bulk-type material under which delivery and payment would be phased over the entire construction period of a particular ship. The Panel recommended also that activities be directed to stress programs for disposal of excess material.

Final implementing actions taken on the Panel recommendations were described in a report dated July 1, 1970. This final report noted that progress billing over the entire construction period had been instituted. The feasibility of phasing delivery and providing incentive for return of excess material is still being studied. Finally, the report stated that a policy had been put into effect which required taking periodic physical inventories.

CONCLUSION

The problems which we identified were similar to those previously identified by the Naval Audit Service and the Navy Ad Hoc Panel. However, as illustrated in this report, only partial corrective action was taken.

We proposed that the Secretary of the Navy take action to ensure that recommendations from internal audits and studies be fully complied with promptly or that reasons for rejecting these recommendations be approved by appropriate command levels.

AGENCY COMMENTS

The Assistant Secretary of the Navy, in commenting on our draft report, stated that positive action had been taken to implement the recommendations resulting from internal reviews. He stated also that for the past 18 months the Inspector General, during the inspection of each shipyard, reviewed the implementation of each audit report recommendation.

The Inspector General's report will include those instances where action by the shipyards has not been considered satisfactory. On the basis of this report, shipyards will be directed to take corrective action and must periodically report the progress of the action being taken.

CHAPTER 6

SCOPE OF REVIEW

We examined into certain aspects of supply management at naval shipyards and into the effectiveness of supply support provided to shipyards by the supply system. Our work included the review of pertinent inventory records and discussions with responsible officials at shipyards, at supply centers, and at the Naval Ship and Supply Systems Commands.

Our work was performed from October 1969 through August 1970 at the following locations:

Shipyards:

- Puget Sound, Bremerton, Washington
- Philadelphia, Philadelphia, Pennsylvania
- Mare Island, Vallejo, California
- Pearl Harbor, Honolulu, Hawaii

Supply Centers:

- Puget Sound, Bremerton, Washington
- Oakland, Oakland, California
- Pearl Harbor, Honolulu, Hawaii

Inventory Control Point:

- Ships Parts Control Center, Mechanicsburg, Pennsylvania

We used automatic data processing equipment to select items of inventory at random for review. The dates on which we selected our samples fell between September 1969 and March 1970, depending on the availability of data processing equipment at the various shipyards.

We used various methods to determine the extent of excess material. In cases where levels had not been established--direct material and unassigned direct material--excess was determined through discussion with shipyard officials as to whether a present or future need existed for the item. The appropriate level of stock which should be held for the shop stores account was based on shipyard criteria, and on-hand quantities exceeding this level were considered to be unneeded. Our determination that insurance items were excess was based mainly on whether the item was properly classified according to Navy criteria.

APPENDIXES



DEPARTMENT OF THE NAVY
OFFICE OF THE SECRETARY
WASHINGTON, D. C. 20350

Mr. Charles M. Bailey
Director, Defense Division
U. S. General Accounting Office
Washington, D. C. 20548

9 FEB 1971

Dear Mr. Bailey:

The Secretary of Defense has asked me to reply to your letter of 1 December 1970 which forwarded the GAO draft report on opportunities to improve supply management at naval shipyards.

I am enclosing the Navy reply to the report.

Sincerely yours,

A handwritten signature in black ink that reads "Charles A. Bowsher". The signature is written in a cursive, slightly slanted style.

CHARLES A. BOWSHER
ASSISTANT SECRETARY OF THE NAVY
(FINANCIAL MANAGEMENT)

Encl:

- (1) Navy Reply to GAO Draft Report of 1 Dec 1970 on Opportunities to Improve Supply Management at Naval Shipyards (OSD Case #3209)

Navy Reply
to
GAO Draft Report of 1 December 1970
on
Opportunities to Improve Supply Management
at Naval Shipyards
(OSD Case #3209)

I. GAO Findings and Recommendations

GAO examined into certain aspects of the supply management practices regarding the inventory of industrial materials on hand at four shipyards: Puget Sound, Philadelphia, Mare Island and Pearl Harbor. Industrial material inventories at these shipyards were about \$59 million, or 53% of the \$110 million total of all shipyards. GAO states that: (1) there was no known shipyard need for 30% of the inventory at these four yards; and (2) this excess material, valued at over \$17 million had not been reported to the naval supply system for possible redistribution or disposal. GAO estimates that disposition of this unneeded material would eliminate annual holding costs of about \$3.4 million; also, if the yards would make maximum use of Navy procedures to reduce the cost of requisitioning low value items, requisitioning costs at these yards could be cut by \$1.3 million annually. GAO states that internal audits and Navy studies of supply management at shipyards identified similar weaknesses, but recommendations had not been fully implemented by the shipyards. GAO makes seven recommendations which are discussed below.

II. Navy Position

The Navy concurs with Recommendations 2 through 7, and with the objectives of Recommendation 1.

The Navy has been working diligently to achieve more effective and efficient operations through improved supply management. The following actions, discussed in more detail in connection with the individual recommendations of the report, are considered indicative of those the Navy has taken or is in the process of taking relative to material management.

1. Continued emphasis on the reduction of NIF (Navy Industrial Fund) inventories. As of 30 September 1970 NIF inventories at the ten naval shipyards were about \$82 million, a reduction of about \$28 million since 31 December 1969. A continuation of this trend in the reduction of NIF inventories is expected.

Enclosure (1)

2. Consolidation of NAVSHIPS policies and procedures for the management of NIF and NIF related materials at the naval shipyards. NAVSHIPS Instruction 7600.62 of 28 December 1970 consolidates into one cohesive instruction of seventeen chapters the total policy of NAVSHIPS for the management of NIF materials. Ten existing instructions are canceled by this one. This directive provides the guidance to the shipyards to correct several of the problems noted in the report.

3. Institution of a number of projects within the framework of the SMP (Shipyard Management Program) for the improvement of material management. The primary projects are:

SMP Item B3.1. Development of a single manual to be used on a common basis by all naval shipyards for the internal management of material. This will be in the playscript format and will be to a level of detail for most functions, sufficient to constitute desk instructions for individuals responsible for performing assigned duties. When completed, this Material Management Manual will provide the detailed instructions for total management of NIF materials and will provide a firm basis for auditing the shipyard material management performance. It is planned that this Manual will replace all material instructions in the shipyards and provide one well integrated document for shipyard material management.

SMP Item B3.5. Standardize the functions of Material Control Centers at the naval shipyards to achieve the most effective operation in this area.

SMP Item B3.6. Develop revised shop stores stocking procedures for use at all naval shipyards. When completed this will form the shop stores chapter in the Material Management Manual.

SMP Item B3.7. Optimize utilization of the pre-expended bin material through review of present utilization and present policy and establishment of revised definitive guides for future utilization.

SMP Item B3.8. Establish and implement effective procedures for the proper control and accountability of material removed from ships during overhaul and conversion.

SMP Item B3.9. Develop and implement procedures which will result in the delivery of the right amount of the proper material at the time it is required for the shipwork being performed, thereby precluding the accumulation of residual DMI (Direct Material Inventory).

4. Issued NAVSHIPS Instruction 4614.1C of 9 November 1970 on priorities to be used for ordering material for shipyard work that defines the priorities in terms that the shipyard uses to manage the shipyard effort vice terms related to ship operational readiness.

APPENDIX I

This should reduce abuses of the priority system and provide a base against which meaningful audits of shipyard performance in this area can be evaluated.

The Naval Ship Systems Command (NAVSHIPS) has and will continue to institute corrective action as the need indicates and, as reflected in the detailed comments that follow, is taking aggressive action with respect to the recommendations contained in this report. However, all the actions that are taken must of necessity be tempered by the fact that shipyards must retain their ability to guarantee that scheduled work can proceed in a timely and orderly manner.

Recommendation 1. Requisition material on the basis of when it is needed on the job so that lengthy holding of the material prior to actual use can be avoided.

Comment:

Concur fully with the objectives of the recommendation. This is a very complex problem with many areas requiring resolution far beyond the data stated in the report. NAVSHIPS efforts in this regard include:

1. Issuance of the improved priority system for ordering materials in naval shipyards, NAVSHIPS Instruction 4614.1C. The importance of such a priority system cannot be overemphasized because it is this priority number and not a required date that the Supply System uses as a basis of furnishing the material.
2. Development of procedures for the ordering of material (SMP Item B3.9). The Boston Naval Shipyard has been tasked by NAVSHIPS to develop such procedures. Completion of the task is currently scheduled for mid 1971. The final product will, after review by NAVSHIPS and all the shipyards, form a part of the Material Management Manual. Considerable effort has already been expended in identifying the problems in the material ordering process.
3. Development of an interface in the standard shipyard MIS (Management Information System) between the production work scheduling programs used by the shops and the material status reporting system such that the required date for material identified to a key operation on which it is to be used can be updated automatically whenever a change in production schedules is made. This will provide the Supply Department personnel with the latest information on material requirement dates; thus expediting or alternative action can be taken for material in a timely manner. Data processing program changes were distributed to all shipyards in December 1970 to permit use of this capability.

Recommendation 2. Establish stocking levels for shop stores inventories consistent with leadtimes required to obtain material from supply sources.

Recommendation 3. Establish procedures to assure that demand data is adjusted to reflect material returned to inventories and that the returned material is considered in making subsequent procurements.

Comment:

Concur. Shipyard Management Program Item I-B3.6, assigned to Puget Sound Naval Shipyard and scheduled for completion in June 1971, specifies an analysis of stocking policy. However, in view of the magnitude of the problem outlined in the GAO report, this Command will re-emphasize the objectives of Item I-B3.6 to assure that the stocking policy developed from this study gives adequate consideration to the leadtimes required to obtain material from supply sources and to the adjustment of demand data to reflect material returned to inventories. When revised stocking criteria are developed and agreed upon as a result of this study, NAVSHIPS will direct all shipyards to prepare a plan incorporating these criteria.

Recommendation 4. Issue more specific guidelines for the disposition of material left over from completed jobs.

Recommendation 5. Require shipyards to promptly identify and report excess material to the Supply System for redistribution to other Government customers or disposal if the material is no longer needed, and initiate operational standards and a reporting system which would adequately measure the action of shipyards to keep inventories to a minimum.

Comment:

Concur. NAVSHIPS Instruction 7600.62 of 28 December 1970 provides the procedures to be used to assure expeditious disposition of excess materials, establishes firm guidelines for placing materials in the DMI account, and sets up annual inventory and reporting requirements for this account. It is expected that this instruction should substantially eliminate the problems discussed in the GAO report.

In addition, to further expedite the disposition of excess materials, NAVSHIPS has initiated a change to the present shipyard MIS report on excess material to permit print-out of this report on key operation closeout vice job order closure as at present. This will permit initiation of disposal action on much excess material, weeks and months earlier than at present, and is expected to have a major effect on reducing DMI inventories. Systems analysis of this change as a part of an overall improvement of productive work management has been completed. Programming of the change will commence in the near future.

Recommendation 6. SECNAV require shipyards to fully utilize current Navy policy regarding the bulk-issue of material valued at \$2 or less and consider extending policy to cover items perhaps up to a value of \$10.

APPENDIX I

Comment:

Concur. NAVSHIPS has already taken action in this area. SMP Item I-B3.7 assigned to Pearl Harbor Naval Shipyard, and scheduled for completion in early 1971 has as its objective, the optimum utilization of pre-expended bin material. Based on the initial report of this study, NAVSHIPS Instruction 7600.62 authorized shipyards to pre-expend material up to a unit value of \$10.00. In addition, this instruction contains effective guidelines for maximizing the use of pre-expended bins. This does not mean however, that all issues of material under this unit value should be handled by the pre-expended bin procedures, because some specific items (e.g., pilferable items) require internal control by the specific shipyard.

Recommendation 7. SECNAV take the necessary action to assure that recommendations resulting from internal audits and studies are fully complied with in a timely manner, or that reasons for rejection be approved by Command levels.

Comment:

The Navy has and will continue to take action to ensure that the findings and recommendations in internal audits are reviewed, and where applicable, that positive action is taken to implement the recommendations. Shipyard management responses are critically reviewed by appropriate Headquarters and higher level personnel to ensure that corrective action is taken or planned. In addition, for the past 18 months as a part of the NAVSHIPS Inspector General (triennial) Command Inspections of each shipyard, the implementation of each audit report recommendation since the previous inspection is reviewed by the inspection team. When implementation is not considered to be satisfactory, an appropriate recommendation is included in the inspection report, which, when approved, becomes a NAVSHIPS final directed action, and requires periodic progress reports until the corrective action has been completed. Further progress in obtaining full compliance with audit recommendations is anticipated as each shipyard Command inspection is completed.

PRINCIPAL OFFICIALS OF
THE DEPARTMENT OF DEFENSE AND
THE DEPARTMENT OF THE NAVY
RESPONSIBLE FOR THE ADMINISTRATION OF
ACTIVITIES DISCUSSED IN THIS REPORT

	Tenure of office	
	From	To
<u>DEPARTMENT OF DEFENSE</u>		
SECRETARY OF DEFENSE:		
Melvin R. Laird	Jan. 1969	Present
Clark M. Clifford	Mar. 1968	Jan. 1969
Robert S. McNamara	Jan. 1961	Feb. 1968
DEPUTY SECRETARY OF DEFENSE:		
David Packard	Jan. 1969	Present
Paul H. Nitze	July 1967	Jan. 1969
ASSISTANT SECRETARY OF DEFENSE (INSTALLATIONS AND LOGISTICS):		
Barry J. Shillito	Feb. 1969	Present
Thomas D. Morris	Sept. 1967	Jan. 1969
<u>DEPARTMENT OF THE NAVY</u>		
SECRETARY OF THE NAVY:		
John H. Chaffee	Jan. 1969	Present
Paul R. Ignatius	Sept. 1967	Jan. 1969
UNDERSECRETARY OF THE NAVY:		
John W. Warner	Feb. 1969	Present
Charles F. Baird	Aug. 1967	Jan. 1969
ASSISTANT SECRETARY OF THE NAVY (INSTALLATIONS AND LOGISTICS):		
Frank P. Sanders	Feb. 1969	Present
Barry J. Shillito	Apr. 1968	Jan. 1969

<u>Tenure of office</u>	
<u>From</u>	<u>To</u>

DEPARTMENT OF THE NAVY (continued)

ASSISTANT SECRETARY OF THE NAVY
(INSTALLATIONS AND LOGISTICS)
(continued):

Vacant	Feb. 1968	Apr. 1968
Graeme C. Bannerman	Feb. 1965	Feb. 1968

CHIEF OF NAVAL OPERATIONS:

Adm. Elmo R. Zumwalt, Jr.	July 1970	Present
Adm. Thomas H. Moorer	Aug. 1967	June 1970

CHIEF, NAVAL MATERIAL COMMAND:

Vice Adm. J. D. Arnold	Aug. 1970	Present
Adm. Ignatius J. Galantin	Mar. 1965	July 1970

COMMANDER, NAVAL SHIP SYSTEMS
COMMAND:

Rear Adm. N. Sonenshein	Aug. 1969	Present
Rear Adm. Edward J. Fahy	Feb. 1966	July 1969

COMMANDER, NAVAL SUPPLY SYSTEMS
COMMAND:

Rear Adm. Kenneth R. Wheeler	July 1970	Present
Rear Adm. B. H. Bieri, Jr.	Aug. 1967	June 1970